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THE EDITORS SAY:

It Can Be Done!

THE feature article in this issue of the *Journal* recalls the familiar poem, "It Couldn't Be Done," by Edgar A. Guest. Who would think of trying to measure the so-called "intangibles" in education? Numbers of people in the evaluation field during the past decade or two have acknowledged that it could not be done. Or if they did not acknowledge it, they professed an unwillingness to believe it might be done. But researchers Lewerenz and Horn, of the Los Angeles City Schools, have made a valiant and significant start in solving the difficulty. The impossible will take them only a little longer.

The article by Lewerenz and Horn should be read carefully by educational leaders, or anyone generally responsible for interpreting the modern curriculum to school patrons. To those who insist on the measurable comfort of a simple "three R's" curriculum, it is high time that education demonstrate the measurable effectiveness and attainment of some of its more complex methods and objectives. Assuming that the Los Angeles research eventuates in valid procedures or devices of evaluating pupil progress in the area of "intangibles," we may be much closer than ever before to accumulating conclusive evidence that children in modern schools are being prepared for competency in citizenship and personal development as well as the traditional fundamentals. When this goal is attained, the teaching profession will have powerful new instruments for interpreting and reporting pupil growth in hitherto unverifiable, but important areas of learning.

The research by Lewerenz and Horn should stimulate others to pioneer in the relatively unexplored frontier of measuring pupil learning in pupil behavior terms. Corroborative research in due time should establish valid technics of examining the less objective aspects of teaching and learning. Famous philosophers have said that "whatever can be measured is real" and that "whatever exists at all exists in some amount." American ingenuity, at this moment of the Los Angeles variety, combined with insatiable curiosity invariably leads to an effort to solve the currently insolvable. Our record of successful solutions is respectable.

Measuring the "Intangibles" in Education

DR. ALICE HORN AND DR. ALFRED S. LEWERENZ

Los Angeles City Schools

A FIRST STEP in measuring the so-called "intangibles" of education is to cease thinking of them as illusive. The objectives of the curriculum are stated, for the most part, in terms of behavior. Behaviors manifested by individuals are usually in terms of action that can be observed and so recorded. It well might be a basic rule of evaluation that measurement should be in terms of pupil growth toward objectives. If an objective is so rarified in nature that its attainment does not result in observable changes in behavior, then its right to be included in the curriculum may be questioned. Goal setting and curriculum planning should be in terms of attainable objectives. High-sounding goals which are not within the capacity of the teacher to teach or pupils to attain are simply so much pedagogical window dressing. Such goals are pleasing to the philosophical thinker, but lack in practical application because the realization of such goals has not been translated into observable behavior.

What Are the Intangibles?

The sections of the curriculum that we designate by the term "intangibles" are those desired behaviors other than attainment in the basic skills. In most cases they are equivalent to the old fashioned common virtues. Some of the areas of the so-called "intangibles" are: (1) citizenship, (2) character and human relations, (3) health and safety, (4) understanding of environment, (5) vocational competence, (6) consumer effectiveness, (7) successful family life, (8) use of leisure time, (9) appreciation of beauty, (10) effective thinking, and (11) world-mindedness. Every one of these eleven objectives can be described in terms of behavior. For example, in the case of "Citizenship," pupil growth can be measured in terms of the extent to which he practices democracy in group

Dr. Alice M. Horn is consultant in the Evaluation Section of the Los Angeles City Schools, a position she has held for the past two years. Her professional experience includes teaching, counseling, supervising, and administration in the Los Angeles City Schools. She has also taught at the University of Southern California, from which institution she received her doctorate in 1937.

Dr. Alfred S. Lewerenz for the past five years has served as head supervisor of the Evaluation Section of the Los Angeles City Schools. He previously served as supervisor of vocational education for the district. Dr. Lewerenz completed his doctorate at the University of Southern California in 1937. He is a member of the editorial board of the California Journal of Educational Research.

relations and the ability he shows in detecting and analyzing propaganda in public affairs.

Fortunate is the evaluator where the areas of the curriculum have been stated in terms of behaviors. This is the case in the Los Angeles City Schools. The Curriculum Division has prepared the *Point of View*¹ which is, to quote, "a unifying factor around which the entire educational program can be built." It has been written in the belief that educational purposes should be based on the needs for effective living in our American democracy. The needs for effective living include the eleven areas mentioned above. With each area there is a one-page statement of how an individual acts who is achieving that objective.

For other California school districts, the *State Framework*,² now in preparation, may serve much the same purpose. The *State Framework* offers four main purposes of education which are:

- I. Full realization of individual capacities
- II. Human relationships
- III. Economic efficiency
- IV. Civic responsibility

Under the heading "Civic Responsibility," for example, the *Framework* says that effective citizenship requires that the individual:³

1. Acts upon an understanding and loyalty to democratic ideals.
2. Understands and appreciates the positive advantages of American institutions.
3. Be sensitive to the disparities of human circumstances.
4. Acts with others to correct unsatisfactory conditions.
5. Understands local, state, national and international social structures and social processes.
6. Achieves skill with processes of group action; in student self-governing groups learns criteria for making wise choices of action.
7. Knows the achievements of the people who have made the United States a great nation.
8. Develops defenses against propaganda.
9. Accepts honest differences of opinion.
10. Realizes the importance of wise use of the resources of the nation and of the world.
11. Measures scientific advances by contributions to the general welfare.
12. Be an active cooperating member of the world community.

¹ *Point of View*, Los Angeles City School Districts, Publication No. 470, 1949. 40 pp.

² *A Framework for Public Education in California*, California State Department of Education. Sacramento: October, 1948. 28 pp.

³ *Ibid.*, p. 9.

13. Works to achieve and maintain peace in the world.
14. Respects the law.
15. Meets his civic obligations.

Here, then, in the *Point of View* and the *State Framework of Education* are the bases for an evaluation of pupil growth. The evaluator needs only to select the instrument or technique best adapted for the measurement of a particular behavior. Thus a test of factual knowledge could be built for Items 5 and 7 above. Rating scales administered by trained observers could be employed in the case of Items 4, 6, 8, 10, 11, 12, and 13. Such measures, of course, would need to be set up according to the maturity level of the pupils and with due regard for their ability and background of experience.

Behavior Studied in Lifelike Situations

If we wish to measure behavior it is better that the testing situation resemble life rather than classroom conditions. Back in the early 1920's it was found by Vernon Cady⁴ that in measuring a trait such as honesty, incentive had a lot to do with the degree of honesty shown. Scientific evidence has thus indicated that even students who under usual conditions were considered highly honest would actually cheat in a situation in which there was a high expectancy that they would not be detected.

The work of Hartshorne and May in their *Studies in Deceit* was to some extent patterned after these early Cady studies as the acknowledgment in Volume I indicates.⁵ To the present day evaluator the significance of these investigations is that one needs to have a test situation as nearly as possible like a life situation in order to measure true behavior. Paper and pencil tests answered in the calm of the classroom do not give any satisfactory measure of attitude or tendencies for behavior. It is only when real emotional forces are operating that one can hope to secure an adequate measure of the quality being evaluated. Therefore, in today's experimental efforts toward evaluating the so-called "intangibles," it is important that the devices which are being built to measure behavior are applied, as nearly as possible, to a real home or neighborhood activity free of the usual classroom supervision.

The best test setting of all probably would be to take a group of children to an isolated spot where none of the ordinary controls were in operation and then observe their behavior. It is recognized that such ideal conditions for observing behavior are not possible or practical and that the classroom will have to remain the locale of such testing. Evaluation

⁴Cady, Vernon M., *The Estimation of Juvenile Incorrigibility*, Journal of Delinquency Monograph, No. 2. California: Whittier State School, 1923. 140 pp.

⁵Hartshorne, Hugh, and May, Mark A., *Studies In Deceit*, Macmillan, 1928.

techniques, however, must free behavior as much as possible from the usual controls. Test situations must allow for the free expression of emotional traits and character qualities. In one such measure, the *Mystery Box Game*, which is described below, the procedure has been tailored to fit these premises.

Mystery Box Game

Some years ago one of the authors of this article devised a test which had as its purpose an appraisal of the ability with which the members of a class group work together.⁶ This device was called the *Mystery Box Game* and was standardized for its original purpose of measuring group cooperation. The completion of the game required that the pupils work together to get a solution, and the amount of time they took to finish the game was one direct measure of their ability to cooperate as a group. The *Mystery Box Game* consists of a black suitcase containing: (1) a smaller case filled with little cards of various colors on each of which is printed a letter and a number; (2) an unlocked wooden chalk box painted red in which is placed a mechanical toy; (3) a second wooden chest (locked) containing a more complex type of toy; (4) a set of colored cards on which are printed completed sentences; and (5) sets of directions for completing the game. The class to be measured is shown the unlocked box. The marble-operated toy inside this box is taken out and demonstrated. A general discussion of the principle of gravity follows as related to the operation of the toy. By this time the children in the class are much interested in the toy and intrigued by the whole idea of the *Mystery Box Game*. Next, the small wooden chest is shown and the class is told that they may see the contents — an even more interesting toy — if they can find the key that unlocks the chest. Directions for finding the key are then read and all details that are needed for the solution of the test are given to the students. The directions state that each pupil will be given a number of little cards of different colors and numbers and that the answer as to where the key is hidden will be found by placing cards of the same color together in consecutive numerical order. The group is also told that they may trade cards, may talk to each other, and work with partners or in groups.

After the directions, each member of the class is given a handful of the little cards bearing letters and numbers, perhaps 10-15 cards in all. In spite of the fact that all of the directions for playing the game are given at the time the box is opened, it is interesting to note that most pupils have to work out these directions for themselves during the process of the game. In the initial stages of the game itself, the pupils spend some

⁶ Lewerenz, Alfred S., "Measurement of Pupil Behavior in the Classroom," *Educational Method*, November, 1932. pp. 98-103.

time getting the general procedure clear in their own minds; that is, pupils tend to work alone for a few minutes but to a varying degree begin to work together either with partners or with groups for the purpose of exchanging cards in order to build sentences all of one color.

As a sentence is completed the children, who have worked on it, write it on a slip of paper, sign their names and hand in the slip to the test administrator. If the sentence is correct the names are read aloud together with the sentence, and the same sentence on a large card is then placed on the wall according to a numerical sequence. When all twelve sentences have been completed and the cards are in order on the wall, the children are able to determine where the key to the Mystery Box is hidden. The child who first writes down and signs his name to the correct statement of where the key is hidden has the honor of securing the key, opening the box, and showing the contents to the class.

Behavior Revealed in Game Test

During the progress of the game there are numerous opportunities for the children to display both positive and negative characteristics such as leadership, followership, indifference, cheating, laziness, parasitism, etc. The speed with which the game is completed, in part, depends upon the average mental ability of the group plus their experience in group activities. As stated earlier, the original purpose of the test was to measure group cooperation and the original standardization was made on that basis. However, while the test still fulfills its original purpose well, repeated administrations have shown that there are many additional valuable uses to which the device may be put. The test provides a planned situation so well organized that the administrators free themselves from the necessity of continuing to motivate behavior. It is possible, therefore, for most of the observers to spend their time on observation of behaviors as they occur. The device carries so much appeal to children that once the project is started it carries itself to completion. Due to the intense interest and desire to win, a great many of the usual inhibitions of the classroom are thrown aside and youngsters exhibit their more basic social personality patterns, such as leadership, honesty, cooperation and planning, and their negative counterparts.

It has been found that for best results a number of observers should be present, i.e., one observer for every four to six children. Fortunately, this has usually been the case due to the fact that the game has been administered with a semi-clinical group made up of teachers, supervisors, administrators, counselors, school nurses, social workers, etc. A number of observers is necessary to secure the maximum value out of the game.

In giving the *Mystery Box Game*, our practice has been to assign a

given number of children to each observer to watch carefully during the activity of the game. One or two individuals who have had sufficient experience with the test to understand the probable meaning of certain behaviors, such as hoarding cards, finger sucking, masked theft, aggression, etc., specialize on an over-all observation. Before the game starts each child has a card bearing a number pinned to his back in order that he may be more easily identified by observers.

The general climate of the classroom manifests itself during the giving of the game and certain classes show an appreciably greater amount of ability to work together in groups than others. This, in turn, seems to be one result of the class having had the privilege of working together on committees, etc., as part of their educational program.

Analyzing Game Test Results

At the present time it would appear that one of the most valuable uses of the game is in detecting possible significant behaviors, and in checking the probable meanings of these behaviors with all of the known data about the child.

The *Mystery Box Game* does not give the whole picture concerning the child, but gives significant clues which in turn are useful in drawing out information concerning the child. During the clinical discussion which follows, an attempt is made to interpret the results and, when possible, to offer suggestions for helping to correct tendencies that have caused the child to make bad adjustments. For this reason, the clinical discussion held after the test is given is one of the most important features of the *Mystery Box Game*. Frequently a teacher changes her previously hostile attitude toward a pupil because of her close observation of his performance in the group. This is especially true of a certain type of pupil who has been successful in disrupting the class and has, therefore, disturbed the teacher. His aggressive and anti-social behavior has been such as to lead this teacher to believe that this child is a leader of others. However, close observation of such a child may reveal that he is actually rejected by other classmates. The *Mystery Box Game* makes it possible for the teacher to see the youngster as needing help. No longer does she feel that he is a power agitating against her.

To be adequate in the interpretation of the *Mystery Box Game* would take as much training and background as is needed for using the *Rorschach Ink Blot Test*. Certainly the test, as it has been described here, would be valueless in the hands of the inexperienced and could actually prove to be a dangerous device. However, a team of three individuals carefully trained in the administration of the test can do much in service education by providing opportunities for teachers to observe pupils in

action. This procedure would not only clarify methods of thinking and treatment of those specific pupils during the group discussion following the test, but would enrich the whole viewpoint of the teachers toward children in general. Among other findings has come a better understanding of the types of leadership and its manifestations in the classroom situation. The importance of the natural leader of low intelligence, for example, is seen more clearly. Individuals possessed of little creative ability, but strong in the capacity to lead others, can actually influence more intelligent individuals to take the wrong course of action. The adjustment and training of such people has great significance in a democracy.

(The second half of this article will appear in the November issue.)

* * * * *

A unique approach in determining tuition charges has been developed by Everett A. McDonald, superintendent of schools, East Hampton, Connecticut. A tuition formula was established in order to charge the tuition towns equitable tuition rates.

The tuition formula works as follows: The sum of the gross budget, as expended during the school year for elementary and secondary education, and a depreciation figure based upon two per cent of the total value of the buildings are added to give a gross expenditure figure. Deducted from the gross expenditures are all of those items that do not concern tuition students or are only for East Hampton's benefit. These items include transportation, bonds, interest, enumeration, and so forth. The difference between the figures is referred to as net expenses. Dividing the net expenses by the average daily membership of either elementary or secondary school students gives the cost per student. Subtracted from this figure is the amount of income per student received. The remainder is the net cost per student.

The tuition rate to be charged is determined at the end of the fiscal year and is then applied to the daily membership of the next school year. A detailed description of the formula may be found in the June, 1950, issue of the *Nation's Schools*, page 33.

How Shall We Classify Educational Research?

LEIGHTON H. JOHNSON

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WHILE writing a study on "Research Procedures Employed in Doctoral Dissertations in Education," considerable difficulty was encountered in dealing with classification of research methods and procedures. Such classifications are often inconsistent in that processes of different categories, which occur at different stages of research, or reflect different aspects of research, are grouped as of equal importance in one list. Disagreement in terminology combined with this inconsistency leads to ambiguity and confusion in discussing and classifying research methodology. Consider Crawford's classification of techniques in educational research: (1)

1. Experimental.	8. Interviews.
2. Historical.	9. Questionnaire.
3. Psychological.	10. Observation.
4. Case Study.	11. Measurement.
5. Survey.	12. Statistical.
6. Curriculum Making.	13. Tabular and Graphic.
7. Job Analysis.	14. Library.

In Crawford's fourteen techniques, it is apparent that the experimental and historical are in a different category from the questionnaire and interview. Experimental and historical imply a fundamental approach or attack on a problem; questionnaire and interview are means of gathering data. A statistical technique is a means of treating data which have been gathered, while a library technique would seem to be involved in all educational research. Thus, one feels an inconsistency in the classification and the question arises: "Why not a consistent classification of research processes which would be generally acceptable?"

Some authorities like Good, Barr, and Scates (2), prefer an attitude where "no distinction is made between such terms as methods, techniques, procedures, and types of research." However, when a distinction is made between *methods* as fundamental approaches on attacks on problems, and

Since June, 1949, Leighton Johnson has served as assistant in educational administration at the University of California, Berkeley. Previously he had been a teacher and counselor in the Oakland Public Schools. His article is based upon his master's thesis which was completed at the University of California, Berkeley, in 1949. Mr. Johnson has been a member of the summer session staff of the University of New Mexico this year.

procedures as specific ways of collecting and treating data, a logical and consistent scheme of classification can be developed. Recent literature reflects a disposition to accept this distinction between an attitude or approach to a problem and the specific processes of collecting and treating data (3).

Whitney found twenty-two concepts of methods of educational research in a survey of twelve popular sources, and tabulated them to indicate relative frequency (4). The four most frequently occurring concepts imply *method* as a fundamental attack on the problem. These four methods are suggested as basic because of their wide usage, and because they logically divide a category of "approach to the problem":

1. Experimental.	3. Historical.
2. Descriptive.	4. Philosophical.

In classifying procedures, there is less tendency toward agreement. One can begin by distinguishing procedures for the collection of data from procedures for the analysis and treatment of data. In the classifications of these two kinds of procedures which follow, there has not been an attempt to classify each specific procedure available, but rather an effort to group procedures by type or kind:

PROCEDURES EMPLOYED IN THE COLLECTION OF DATA IN EDUCATIONAL RESEARCH

1. REFERENCE TO LITERATURE	Unstandardized Tests
2. OBSERVATION:	Special Apparatus
Casual	Evaluative Aids
Planned	
Rating Scales	5. DOCUMENTARY INVESTIGATION:
Check Lists	Legal Documents
3. INQUIRY:	Personal Documents
Questionnaires	Files and Records
Interviews	
Conferences	6. COMBINATIONS:
Opinion Surveys	Case Studies
4. MEASUREMENT:	Genetic Studies
Standardized Tests	Job Analyses
	Surveys

PROCEDURES EMPLOYED IN THE ANALYSIS AND INTERPRETATION OF DATA IN EDUCATIONAL RESEARCH

1. GRAPHIC:	2. QUANTITATIVE:	3. QUALITATIVE
Graphs	Point Measures	
Charts	Variability	
Tables	Reliability	
	Correlation	
	Causation	
	Prediction	
		4. CONSTRUCTIVE:
		Generalization
		Reporting
		New Procedures

In the classifications suggested, procedures are grouped as they most commonly occur and the subdivisions may be regarded as more indicative than all-inclusive. For instance, one will think of other specific processes which could be listed under combinations, but a list aiming at complete inclusion would lead to more debate than agreement.

It is difficult to provide specific subdivisions under qualitative procedures. Judgment and evaluation, which are implied, will figure at all stages of good research. What is suggested here is that in analysis and interpretation of data, as in philosophic research, a qualitative procedure may be most important. It will be recognized that too often the qualitative treatment of data is overlooked in favor of thorough quantitative analysis.

Some readers will immediately miss old friends in the classifications suggested. Where is a "sampling procedure" included? In the suggested classification, sampling is not considered a procedure in itself, but assumed to be a necessary and important aspect of any selection of data by any of the procedures listed. Likewise, one may inquire for a "statistical method." In terms of the suggested scheme, he would expect to use statistics as a tool in the employment of one of the procedures for analyzing and interpreting data, but not as a method or procedure in and of itself.

The classifications of methods and procedures outlined here are presented as suggestions, representing some consideration of an area of educational research which is characterized by disagreement and ambiguity. It seems timely and appropriate that one of the early issues of the *California Journal of Educational Research* should include thinking on the problem. It is hoped that further thought and discussion will be provoked leading to a more generally acceptable classification of research methodology in education.

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Some Teacher Load Problems in California High Schools *

MALCOLM P. MURPHY

Sacramento Senior High School

THE major objective of this survey was to study the problems of teacher load and class size in the senior high schools of California. The chief source of information was a questionnaire which was sent to the chief administrators of all senior high schools in California. The survey sought to determine the size of classes, the direction of extra-curricular activities, methods of equalizing the total load, and policies of extra pay for extra services for the 1947-48 school year.

A total of 319 survey forms were sent to California high schools. Of this number, 195 were sent to schools having less than 500 students, 66 to schools of 500 to 1,000 enrollment, and 58 to schools of over 1,000 enrollment. The number of high schools participating in the survey, according to size classification, were 91, 51, and 89, respectively. The following findings are based upon these schools.

Class Size as a Teacher Load Factor

If the recommendations of principals are to be taken for the correct size of high school classes, then the classes for most subjects in California high schools are about the right size. In the summary of high schools of all sizes, the classes in the departments of art, commercial, foreign language, industrial arts, home economics, music, and science are in practice close to the standard recommended by the administrators. In the department of English, mathematics, social studies, girls' and boys' physical education, the classes are slightly larger than is recommended, but the

* The reader will be interested to learn that the California State Department of Education, in cooperation with the California Teachers Association, secured detailed information last April regarding teacher load in California. The report of the survey, which will be published early in 1951, will supplement and amplify Dr. Murphy's findings. — *Editor.*

Dr. Malcolm P. Murphy was a teacher, counselor, student body adviser, and vice principal in Sacramento high schools before becoming principal of Sacramento Senior High School in 1943. He began his teaching in a rural school in Illinois, received his A.B. degree at Colorado College, and taught two years in Colorado before coming to California in 1928. His M.A. as well as Ed.D. degree was received at Stanford University. This article is based upon his doctoral dissertation which he completed in June, 1949.

difference is not a significant one. In the large high schools, those with enrollment of over 1,000 students, the difference between practice and administrator recommendation is more noticeable. In the department of art, the classes are smaller than is recommended; those in mathematics and girls' physical education are about right in size; while in all other departments the classes are slightly larger than is recommended.

One of the startling features of the class size figures is the range as recommended by principals. A wide range in *practice* is understandable, because of a number of local reasons familiar to every administrator, but the wide range in *recommendations* for "standard" and maximums is not so easily explained. Even in the schools of the same size group, the range of recommended class size varies greatly as shown in the following table.

TABLE I
CLASS SIZES RECOMMENDED BY PRINCIPALS OF LARGE HIGH SCHOOLS

	Recommended Range	Standard Median	Recommended Range	Maximum Median
Art.....	15-30	25	20-45	30
Home Economics.....	16-32	20	20-34	25
Social Studies.....	24-35	30	30-45	35

Other Classroom Load Factors

There are also wide ranges in other factors that are responsible for the classroom phase of teaching load. The daily schedule of classes ranges from 5 to 8 periods a day, and periods vary in length from 40 to 60 minutes. There is nothing that approaches standardization of time spent in classes in California high schools. Although the most common combination is the five-period day with 55-minute periods, it was found in only 24 of the 156 school systems, or 15.4 per cent of the total. The two extremes for total in-class time were 200 and 395 minutes, the upper range almost twice that of the lower. The uses made of the homeroom, activity periods, and study halls are also variable load factors.

Non-classroom Teacher Load Factors

The non-classroom phase of teacher load in California high schools is a heavy factor in the total load of teachers. This consists of the sponsorship of student activities, coaching of athletic teams, counseling, departmental duties, and a variety of administrative assignments. There is no uniform policy in California high schools regarding these factors of teacher load.

Teachers in California high schools have a variety of titles indicating types and degree of responsibility, but there is little in common among schools. One section of the questionnaire secured information on this controversial phase of the teacher load problem. The work done outside the classroom consists of a wide variety of functions, duties, and responsibilities, commonly called extra-curricular activities and administrative assignments. The extent of the load of non-classroom work assigned to each teacher depends upon the amount of time given to some person in lieu of classes to handle such duties. Usually the more time allotted to vice principals, deans, department chairmen, and counselors, the less responsibility is assigned to teachers beyond their classroom work.

The work of a teacher is lightened if there is a department chairman who is responsible for inventories, testing, mimeographing, and similar departmental duties. As the schools increase in size, there is a tendency to have organized subject departments and to make some allowance in the teaching schedule of the chairman. Of the 50 medium-sized schools, 11 allow one hour to the English Department chairman; 3 schools allow 2 hours. Boys' physical education chairmen are given one hour in 8 schools, 2 hours in one school, and 3 hours in another. The large high schools usually have departmental organization, but show wide variations of time given to chairmen in lieu of classes.

Counseling

Counseling, as a specialized service, is widely accepted in California high schools. The extent to which it becomes a part of a teacher's load depends upon whether it is handled by principals, deans, and counselors with time set aside for that purpose or is divided among teachers called advisers or homeroom teachers. Sixty-four per cent of the high schools have one or more persons designated as counselors whose schedules range from a full teaching load to full-time counseling. The most significant ratio for comparative purposes is the number of students counseled for each hour of time set aside for this service. In the 180 reporting schools, the time given to counseling ranged from 25 students per hour in four schools to 600 per hour in one school. The median load is from 125 to 149, with 25 per cent of the schools having from 100 to 174 students for each hour of counseling.

Coaching

There is an apparent trend toward giving lighter teaching schedules to coaches whose work requires that they put in over 45 to 50 hours a week. In the 180 school systems, a time allowance for coaching after school is

made by having the head coach teach only three or four classes; this is evident in the major sports in the following proportions: football, 53, or 29.4 per cent; basketball, 47, or 26.1 per cent; track, 40, or 22.2 per cent; baseball, 42, or 23.3 per cent. In the 39 large schools the head coaches in football do their coaching of varsity teams after school hours in 25, or 64.1 per cent of the cases; 20 of these men teach five regular physical education classes; five teach six classes.

The head coaches of basketball, track, and baseball have similar schedules with some variations. Eleven schools allow the head coach in each of the major sports a period for coaching of his sport, thus requiring him to teach one less class than other teachers. Three large school systems require the head coach to teach only three regular classes. He is permitted to arrive at school at 10:00 or 11:00 a.m. to compensate for the hours given to coaching in the late afternoon and evening. Twelve of the 39 schools allow one period of an instructor's time for minor sports such as swimming, tennis, and golf. Only eight schools of this same group give a man one period for working with the intramural program, thus showing the emphasis given to inter-scholastic sports.

Extra-curricular Responsibilities

This study of practices in California high schools indicates that a lot of lip service is given to the importance of student activities in the school program. As important as it is held to be, the direction, supervision, and development of the program is largely an "after-school" affair. Dramatic productions, dances, game activities aside from coaching, clubs, student body council meetings, yearbooks, and school papers are largely out-of-class activities. In very few cases is one hour of a teacher's time allowed; nor is it considered as important as teaching one class of 30 pupils in a subject field. The small amount of time allowed for vice principals, deans, and others to perform these duties would indicate that in most cases the teachers direct and sponsor them after teaching the usual load of five or six classes.

Only two large high schools have a full-time director of student activities. In the 39 large school systems having senior high schools of over 1,000 enrollment, eight assign one hour in lieu of a class for the direction of student body government or activities; two allow three hours. Sponsors of school publications fare better than most directors of activities. Twenty-seven of the 39 large schools (69.2 per cent) allow one to three hours in lieu of classes for the work of publications. In a few cases an allowance of one free period to a teacher who coaches dramatics, an hour for the comptroller, and an occasional one for cafeteria supervision is about the extent of time in lieu of classes that was found in California high schools.

In another phase of this study it was estimated by principals that 30 per cent of all teachers are giving an average of 5 to 10 hours per week to the student activity program, while about 10 per cent are devoting 10 to 15 hours or more. On the other hand, 75 per cent of the principals indicated that 90 to 100 hours a semester spent as director of student activities are the equivalent of teaching one class, and 73 per cent of them said that a senior high school of 1,000 to 1,500 students should have a director giving most or all of this time to the non-classroom activity program.

In summary of the non-classroom phase of teacher load, it is evident that there are no uniform policies, no recognized standards, and no defined methods of measurement. Whether an hour a day given by an athletic coach, a drama teacher, a department chairman, or a teacher sponsoring an organization or working on a curriculum committee, is equivalent one with the other is a matter of conjecture. Magazine articles, discussion at conferences, and local studies of teacher load, as well as remarks written in on the questionnaire used for this study, indicate that this phase of the problem is responsible for a large part of the overload where it exists.

Methods of Evaluating and Equating Teacher Loads

There is a need for criteria for the evaluation of all phases of teacher load and for standards that recognize the factors of ability, experience, responsibility, and unavoidable overload in terms of equitable compensation.

It is evident that there is no consistent philosophy held by California secondary school administrators to guide their direction of policies and practices of administration of their most important asset for effective education — the teachers themselves. It has been pointed out that principals of schools of similar size for the same department have and recommend classes that range from 20 to 45 and 25 to 45 students. Class schedules per teacher range from 200 minutes to 395 minutes. The median or mode is not necessarily the correct standard. Each school needs to study its own problem for the curriculum emphasis, the community demands, and the extent of the extra-curricular program as it affects each situation. Each school should have its own method for equalizing and evaluating its non-classroom teacher load. Some system should be worked out in each school that will regulate the total load, keeping it within the limits of 45 to 50 hours a week. Without some type of control the load becomes too heavy for the physical and mental well-being of many teachers.

There is not enough attention given by administrators, school boards, and others interested in the teacher personnel problem to the factors that

contribute to the teacher's physical and mental well-being. Overwork causes frustrated and unhappy teachers. Strain, worry, and ill health develop from having more to do than can be done well. The conscientious teacher who seeks out source materials and visual aid materials and attends committee meetings and workshops finds that he hasn't time after school or during the evening for relaxation and normal living. The cumulation of duties, assignments, and responsibilities of one type or another becomes a serious factor contributing to physical and mental ill health. Regardless of the fact that it may not seem professional to measure a teacher's load in hours per week or per day, a teacher, as any other worker, must have rest, relaxation, and leisure. Each school system might improve the effectiveness of teaching considerably by giving more attention to the personal factors that affect teachers themselves.

In many high schools the teacher's student load is too heavy for effective teaching. Individual attention to each student is limited in classes of thirty or more. The philosophy of modern secondary education which attempts to meet the vocational, cultural, and civic needs of all young people requires extensive preparation, differentiated materials, and study and research by the teacher. This phase of teaching is often overlooked in measuring the teacher's time. Other factors which make teaching difficult with many of the high school youth of today are the instability of many homes, the juvenile problem outside the school, and the requirement that all youth attend school until 18 years of age or until high school graduation, and social influences in general.

* * * * *

Commonsense and research tell us that, generally speaking, present-day schools accomplish far more than those of the past. Today's curriculums are broader in scope, richer in detail, and more closely attuned to everyday life. Some of the college subjects of 1900 are today successfully taught in the high schools, and part of the older high school course has moved down into the lower grades. Today's pupil is superior to his earlier counterpart in his range of interests, in his ability to handle thought questions, and in his capacity to apply knowledge and skills. He does less well than his academic ancestor on memory tests of isolated facts only because both school and society have less use for static encyclopedic knowledge. (*Adapted from article in NEA Journal, May, 1950, page 367.*)

Difficulty Level of United Nations Filmstrip Scripts

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A CRITICISM sometimes made of filmstrips is that the reading material contained in them, or in scripts which accompany them, is too difficult for the pupils with whom they are used. This problem is especially acute at the present time in junior and senior high schools where a wide range of reading ability exists. For example, in a tenth grade class recently checked by the writer, the range of reading ability varied from fifth grade to college level. Another reason for reading difficulties is the fact that filmstrips are sometimes selected rather hurriedly and used without a consideration of the terms and concepts contained in the scripts which accompany them.

The problem investigated in this study is: On what level of reading difficulty are the scripts written which accompany selected filmstrips on the United Nations? Filmstrips on the U.N. were selected because the writer has encountered their use in grades VII through XII. In observing their use and in discussing them with teachers, it appeared that some pupils were having difficulty with comprehension of the script.

The question immediately arises as to whether or not the checking of a script which is read orally is a fair check of level of difficulty. According to McKee¹ ". . . beyond the third grade level, the pupil who does not understand a statement which he attempts to read does not understand that statement when it is read or spoken to him."

The first step in this study was to select a formula for use in assessing reading difficulty. After a preliminary tryout of five formulas on United Nations materials,² the Dale-Chall formula was selected for use. This formula is easy to apply and gives grade placement information over a wide range from grade IV to XVI.

The next step was to appraise five filmstrip scripts on the United Nations. The findings are presented below in Table I:

¹ McKee, Paul, *The Teaching of Reading*, Boston: Houghton-Mifflin Company, 1948, p. 11. (McKee cites several studies.)

² See bibliography.

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TABLE I

AVERAGE RAW SCORE AND GRADE PLACEMENT OF FILMSTRIP SCRIPTS BY THE DALE-CHALL FORMULA

Filmstrip	Average Raw Score	Dale-Chall Ratings Grade Placement
Design for World Living-----	9.0199	13 - 15
Pattern for World Prosperity-----	8.1169	11 - 12
A World of Law and Order-----	8.0179	11 - 12
Working Together for Peace-----	8.0001	11 - 12
Better World Neighbors-----	7.4448	9 - 10

All of the scripts analyzed in this study are written on an advanced reading level. Because of the concepts involved in the material presented, it is doubtful if they can or should be "written down" to elementary levels. Rather, the teachers who use them should give attention to the development of the concepts involved in them prior to their utilization. Attention should also be given to the grade levels in which the materials are used. The present practice of using United Nations materials anywhere from grade VII through grade XII is questionable.

A second implication of this study has to do with the appraisal of filmstrips. Is it sound procedure to check level of reading difficulty prior to use? Should audio-visual departments provide such a service for the teacher? In the judgment of the writer, this should be done in connection with new filmstrips of questionable level of difficulty. By taking a sampling of new filmstrips and by securing the cooperation of interested teachers and committees, such a task need not become burdensome.

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Free Teaching Aids in California Schools

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EVERY administrator is aware of the large volume of teaching aids made available at no or nominal cost to public education by a variety of private organizations. To many teachers the abundance of such instructional materials—richly-produced films, pamphlets, slides, wall charts, etc.—has seemed like manna from heaven. Teachers and administrators who felt a great need for materials beyond those furnished in the regular curriculum frequently were impressed favorably also by the prestige, and predisposed to the objectives of the main sources of free teaching materials. The result has been wide and fairly enthusiastic adoption of such aids, particularly those sponsored by large business and manufacturing firms, or by associations representing such enterprises. In recent times a more general consciousness of social issues involved in the use of sponsored aids has developed, and a sharpening of policy in this regard is apparent in literature on the subject and in typical comments of working administrators.

That educators have drawn heavily upon such materials is common knowledge. A glance through the literature on teaching aids in the last ten years will show how much effort has gone into cataloging and making easily available to teachers appropriate check lists of free and inexpensive materials.⁽¹⁾ That the place of commercially-sponsored aids in the schools is dominant over other types of free materials is generally agreed. In a survey of 500 administrators in 1946 it was reported that "not a single respondent fails to use some of these outside (commercial) aids."⁽²⁾

Nor can it be questioned that private organizations, principally commercial, have gone to great expense to put their materials into school hands. A recent article lists fifty places to write to for instructional aids and it is interesting to note that almost all of these are trade associations like the Council on Candy of the National Confectioner's Association, and the American Iron and Steel Institute.⁽³⁾ So complex is the offering of films by large American business to the public schools that a joint distributing service has been set up on a nation-wide scale with libraries and

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distribution centers in twenty-six cities from Boston to Seattle.(4) Production and distribution of pamphlets, comic books, filmstrips, or other aids has become a regular part of almost every large corporation's functions.(5) Business and manufacturing elements have entered the field on a scale that justifies the consideration of the problem along with others in the area of mass media. One great electrical firm, for example, has distributed more than 3,000,000 copies of one comic book to the public schools of America and envisions a more extensive distribution in the future. The big disseminators of educational comics include General Electric, Standard Oil of New Jersey, Ford Motor Company, A & P chain stores, and Thom McCan Shoe Company.(6)

Indeed, practically every type of organization has entered the field of supplying the schools with the things the schools may fail to provide for themselves. A list of non-commercial sponsors ranges from the DAR to the CIO, and includes service clubs, church groups, and fraternal societies. That most of these groups have "axes to grind" cannot be gainsaid, just as commercial sponsors have business considerations in view when they spend money on teaching materials. Motives of sponsors, in general, vary from a rather crude desire to propagandize a specific point of view in the public schools to a desire to establish a favorable mass social connotation for certain ideas and names.

The educator who is sensitive to the problems involved in this situation often feels caught by a dilemma whose two horns are: (a) a very real need for additional materials in the schools, and (b) recognition of the dangers implicit in using materials whose basic design is to engineer consent in the minds of tomorrow's citizens for a particular idea, concept, or product. Recent literature has reflected awareness of this dilemma and a desire to solve it in a way that will permit valuable aids to be used and yet avoid indoctrination of students by outside forces.¹

The California Questionnaire: Results and Interpretation

Consciousness of the problems arising from the use of sponsored aids, and a desire to become better acquainted with current administrative practices in their regard, led the writer to the development of a questionnaire addressed to sixty city school departments in California. Entitled "Questionnaire Regarding Use of Donated Teaching Aids," this inquiry defined "use" as "employment in the classroom with the knowledge and

¹ Perhaps the best recent discussion of administrative policy can be found in "Commercial Supplementary Teaching Materials," a Consumer Education Study of the National Association of Secondary School Principals, published in 1944, condensed in *Education Digest*, January, 1945, pp. 40-43.

sanction of the superintendent or his appointed representative in charge of curriculum." A definition of "donated teaching aids" was established as including "books, pamphlets, comic books, maps, charts, films, filmstrips, or other materials made available to schools on a free or nominal basis by private organizations, including fraternal societies, religious groups, labor unions, business associations, manufacturing firms, clubs, etc."⁷

The questionnaire was organized with the intent of determining several aspects of administrative policy and practice in California city schools:

- a. The extent and character of a conscious policy on sponsored aids
- b. Type of aids used
- c. The character of procedures used for evaluating and adopting such aids
- d. The degree of advertising or propaganda commonly allowed
- e. The sources from which aids are obtained.

Questionnaires were sent to the sixty city superintendents listed in the *California School Directory*, with jurisdictions that varied widely in school population and to a certain degree in grade range. In all, forty-one usable replies were secured, a return of 68.3 per cent. The forty-one returns were prepared carefully and with generous comment by those answering. The main areas of information obtained have been summarized in the following tables and discussion.

Policies Governing the Use of Free Materials

Only a handful of systems evidenced a clear policy which stands as a publicly-stated position, developed as a part of the official administrative program. Of these, one of the most explicit in recognizing administrative responsibilities is the "Statement of Policy on Use of Sponsored Audio-Visual Materials, San Jose Unified School District," published May 13, 1948. This statement, approving the use of such aids within specific limitations, establishes definite procedures for evaluation through representative committees, and tangible criteria to be applied in the selection of such materials. One criterion established in the statement illustrates the direct approach taken:

The materials must be free of advertising which employs propaganda for the particular trade brand or specific organization or institution sponsoring such materials. The name of the sponsor appearing in the film on trucks, factory fronts and otherwise are (Sic) not considered objectionable advertising.(7)

In most cases, respondents were somewhat less definite in the statement of their policies. All implied, however, that donated materials were used if their content contributed to the school's program, and if advertising or propaganda contained in such materials was "minimal," in "good taste," and not "contrary to our way of life."

Use of Donated Teaching Aids

A second purpose of the study was to secure information concerning the kinds of sponsored aids most commonly found in use. The following table summarizes the evidence in this regard.

TABLE I
PERCENTAGE OF RESPONDENT CALIFORNIA CITY SCHOOL
DEPARTMENTS USING VARIOUS TYPES OF
DONATED TEACHING AIDS

<i>Types of Aids</i>	<i>Percentage of Reporting Systems Indicating Use of Type</i>
Pamphlets	92.6
Filmstrips	80.4
Films	78.0
Slides	39.0
Books	34.1
Other Types	21.9*
Comic Books	17.0

* Other teaching aids reported in use include pictures, exhibits, dioramas, maps, newspapers, transcriptions, prints, posters.

It is interesting to compare these figures on actual use with the preference statistics produced by Dameron in 1944. In his ranking of business-sponsored educational materials according to teachers' preference, pamphlets likewise assumed top position, with films in fourth and slides in sixth place.(5) It is probable that the percentages shown in the present table reflect the influence of two major factors: (a) the great volume of sponsored pamphlet and booklet output, and (b) the degree of availability of visual education equipment and skill in responding schools. In view of the varying, yet fundamentally unanimous, endorsement of sponsored aids shown in the survey, it would be difficult otherwise to explain the fact that only 7.4 per cent of respondents report no use of pamphlets, while 22 per cent report no use of films.

Use of sponsored comic books by 17 per cent of responding systems also is worth noting. Large-scale impingement of this medium on the private lives of public school students is now a matter of ten years' history. The current appearance of sponsored comic books in the curriculum should give rise to considerable speculation. Undeniably, the comic book has great and almost drug-like appeal to the young and, unlike the film, requires no special equipment or skill for consumption. Will present policy lead to vastly increased use of this type of sponsored aid in the future? If so, what will the effect be upon the curriculum, on methods, and on the use of regular aids?

(Bibliography to appear with concluding installment in November issue.)

A Study of Assessment Practices in California as They Affect the Equalization Program of Education

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THE purposes of this study are threefold. The first purpose is to investigate assessment practices in California and to determine if the relative taxpaying abilities of the various school districts in California, as they operate under a formula for equalization, are on a sound and equitable basis so that districts will neither profit when assessment ratios are low nor be penalized when assessment ratios are high. Secondly, in order to determine whether or not assessed valuations constitute a true measure of local ability, an investigation will also be necessary with regard to other criteria on a county basis, among these factors being total income of civilian residents, sales and use tax collections, and in lieu tax collections on motor vehicles. Part three of the problem is a study of the practices pertaining to equalization of assessments in the several states of the nation.

In order to ascertain whether assessments as they are now determined in all the counties of the State are uniform, data were secured from 35 counties with respect to gross assessed valuations and sales information for selected properties covering a nine-year period from 1940-41 to 1948-49 for each piece of property. Care was exercised to select properties which would be representative of all areas of the county or school district and which had had no additions or deductions in the nine-year period. In order to have all types of property represented in the study, both urban and rural properties were selected. To implement the data which related market value (sales price) to assessed value, appraisals by professional appraisers of a number of properties throughout the State were related to assessed value of property and compared to the assessed value and actual sales price.

For part two of the problem, raw data for assessed valuations, total income of civilian residents, sales and use tax collections, and in lieu tax collections on motor vehicles were collected on a county basis. These data were treated statistically and related as separate measures of the ability of school districts to support a foundation program of public education.

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To secure data on nationwide practices, a questionnaire was sent to State Superintendents of Public Instruction. The Superintendents were asked if assessed valuations were used in measuring local ability to finance education and whether or not assessed valuations were equalized in their several states.

Findings

Assessed valuations from 1940 to 1948 lagged far behind other indexes of the economy. While the cost-of-living index was increasing 69 per cent, the median increase in the assessed valuation of properties sampled showed an increase of only 14.04 per cent. This compared to an actual increase of 14.36 per cent in revaluation of properties for assessment purposes. While the income of civilian residents was increasing 200.58 per cent, sales and use tax collections, 202.03 per cent, and in lieu tax collections on motor vehicles, 160.30 per cent, the total assessed valuations of the State, including new construction, increased only 54.02 per cent. These comparative data conclusively revealed that the assessed valuations of property did not adequately reflect the presence of increased wealth in the State.

The ratio of assessed value to market value for properties sold in 1940-41 was 38.36 per cent. The ratio in 1948-49 was only 19.72 per cent, indicating again that assessed values did not keep abreast of the economic trends. The appraisals by expert appraisers showed a median ratio of assessed value to appraised value of 18.43 per cent, and it is significant to note that this ratio is highly comparable to the median ratio of assessed value to market value for actual sales.

If the criteria of income of civilian residents and sales and use tax collections had been used instead of assessed valuations to measure the ability of the recipient school district to finance a foundation program of education, the equalization aid would have been apportioned differently. As was to be expected by applying assessed values as they existed, there was rather a high correlation, .75, in rankings of ability to finance a foundation program and the amount of equalization aid apportioned. However, using income of civilian residents and sales and use tax collections, there were found to be correlations of .56 and .41, respectively, in rankings of ability to finance a foundation program and the amount of equalization aid apportioned. The present method of distributing total State aid is inequitable as revealed in the data which produced extremely low correlations in rankings of ability to finance a foundation program and the amount of total State aid apportioned. The correlations for the indexes of assessed valuations, income of civilian residents, and sales and use tax collections were: .22, .28, and .34, respectively.

Further evidence that the total State aid is not apportioned in relation to need was revealed in an analysis of the tax rates of the recipient school districts. The county which was granted the highest amount of State aid had the lowest median school tax rates. The 14 counties with the lowest median tax rates received \$185.25 per unit of average daily attendance in State aid, but the 14 counties with the highest median tax rates received only \$127.15 per unit of average daily attendance in total State aid.

On a nationwide course, a large majority of the states use the proceeds of a local tax on property as a qualifying factor for equalization aid, but very few states have set up adequate centralized bodies to perform the function of equalizing assessments.

Conclusions and Recommendations

A basic principle in measuring equalization aid to school districts should provide that equalization grants be inversely related to the ability of the school district to pay for the service. Assessed valuations as a criterion to measure the ability of a school district to support a foundation program of education will produce a fairly equitable distribution of equalization aid. But if the apportionment of an equalization fund is to be based upon the assessed value of property per unit of average daily attendance in the various school districts without intercounty equalization of assessments, the county assessor will to a large extent determine the amount of equalization aid for public education his county will receive from the State. Obviously, this would place a premium on under-assessments. It thus becomes very important that the 58 counties in California be equalized in their assessments. In the interest of equity for all taxpayers, property within each of the school districts should be equalized at a designated percentage of true value. This can best be achieved by State supervision.

In view of the evidence presented, it is concluded that property in all areas of the State is not overtaxed on the basis of a ratio of 50 per cent of true value. However, it is apparent from the evidence that many property owners are being inequitably treated since there is such a wide variation in the assessment ratios on property within the State. Since the same mandatory tax rates are used in determining the district's contributions to the foundation programs, it is quite obvious that the qualifying tax rates and the equitable assessment of property are closely related. The data in the investigation conclusively authenticate the fact that, due to a lack of intercounty equalization of assessments, 21 of the 35 counties sampled showed no median increase in assessed valuations in 1947-48 as compared to 1946-47, while the remaining 14 counties made general increases in assessments.

It was concluded that the use of assessed valuations as the sole criterion for measuring local ability to finance a foundation program of education was inequitable because property in the various school districts of the State is not assessed at the same proportion of market value. Consequently there is need to establish a *variable ratio method of equalization* which involves the finding of the average ratio of assessed value to market value in each county and then the adjustment of assessed values and maximum school tax rates in each county to the finding. Such a procedure would not change local assessment rolls. The State would merely adjust to local practices. To establish the procedure, some State agency, preferably the State Board of Equalization, would annually make a survey in each county to determine the relationship between the total value of land, improvements, and tangible personal property and the total market value thereof. Since it would be an almost insurmountable task, as well as an infringement upon local governmental rights, to change all assessments once they had been made by the county assessors, upon completion of its statewide survey the State agency should establish ratios of assessed value to market value for each county as between counties and the State as a whole. If the ratio of assessed value to market value in any county differs from the statewide ratio as fixed by the State agency, the value of all land, improvements, and tangible personal property should be adjusted before apportionments of equalization aid are made to school districts.

In order to treat all taxpayers of the State on an equal basis, the maximum tax rates should be subject to adjustment upward or downward in the year in which an adjustment in assessed valuations is necessary. The tax rate adjustment should be the percentage the adjusted assessed valuation of the property in the school district bears to the assessed valuation prior to the adjustment; thus the adjusted tax rate would be productive of the same tax burden in terms of market value of the property taxed as though the property in the district were assessed at the statewide ratio.

If this recommendation should become practice, the equity of all *ad valorem* taxpayers would be served in that the assessed value of all assessable property in California would be equalized for school support, and the adjustment of maximum tax rates would promote equality in the tax burden.

Long Term Prediction of Reading Success

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SINCE its introduction twenty-five years ago, the term "reading readiness" usually has been applied only to readiness for first grade or primary reading. Practically all measures of reading readiness have been validated against the criterion of first grade reading success, which is, of course, what they were developed to predict. This study was undertaken at the suggestion of the director of the Bureau of Research in the San Francisco school system to determine the degree to which first grade tests of intelligence and reading readiness predict reading achievement over a longer period, such as the first five years of elementary school.

Previous Researches

Many studies made during the thirties investigated the importance of factors supposed to comprise or contribute to readiness for formal reading instruction. Most of them found mental age as determined by group tests of intelligence to be the best single predictor, giving coefficients of correlation from .40 to .70 with reading achievement (1, 2, 3). Because of the limited range of tasks which children just entering school can perform, most group tests for this level have common elements. For example, marking pictures in response to oral directions, which is a good measure of reading readiness (4), is also used to test vocabulary or other factors in intelligence tests. Actually, the overlapping of functions tested and items used may make the distinction between some tests of intelligence and reading readiness somewhat arbitrary (5, 6).

The most comprehensive study of reading readiness, by Gates and his co-workers at Teachers College, Columbia University, confirmed the predictive value of such factors as various types of phonetic discrimination, knowledge of letter names, forms and sounds, and the ability to recognize similarities and differences between printed words and letters (4). The widespread belief that there is a minimum chronological or mental age necessary for reading seems to have very little basis in fact (7).

Teaching methods will determine which skills the children will use most in learning to read and so should determine which type of readiness

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test should be used in a particular school system. There is agreement that recognition of and adjustment to individual differences is most important in the teaching of reading, and that reading readiness can be developed by providing the experiences and teaching the skills that contribute to it.

Methods and Data

The reading achievement of 275 pupils in the low sixth grade, as measured by the California Basic Skills Test in September 1948, was correlated with their scores on the Lee-Clark Reading Readiness Test and the Pintner-Cunningham Primary Test of Mental Ability, which they had taken during the first month of the first grade.

This sample, almost one tenth of the low sixth grade in San Francisco public schools, was selected from ten schools in widely varying neighborhoods so as to include almost every nationality and socio-economic group in the city. Their reading achievement was matched, in range, variability and mean, with that of the entire low sixth grade. The range of distribution of their mental ages, although not held constant, corresponded very closely to that of the larger group.

Of the group studied, 17 per cent had been retarded one or more semesters and three per cent had been accelerated one semester. Eighty-five per cent of the sample had attended kindergarten.¹

Test Scores

The generally accepted linguistic superiority of girls was found in this study. Sex differences in first grade reading readiness scores, mental ages and I.Q.'s were found to be statistically significant at the five per cent level. The slight superiority of girls in sixth grade reading achievement was not statistically significant, but it was consistent with the earlier difference. There were no sex differences in variability.

The first grade test results of the sixth graders studied were as follows:

	Range	Mean	S.D.
Reading readiness scores-----	0—62*	35.3	13.3
Mental ages-----	4.0—9.6	6.1	1.3
Intelligence quotients-----	57—153	100.2	16.2

* Entire possible range.

Legal minimum age requirements and promotional policies limit the age range in each grade. All but 14 pupils were less than a year above the age of five-years-six-months required for first grade entrance. At the beginning of the sixth grade, only 20 of the group were above age twelve and none below ten and a half years.

¹ Data provided by Bureau of Research, San Francisco Unified School District.

Validity of Predictions

Coefficients of correlation between first grade predictive data and sixth grade reading achievement computed for the entire sample and for boys and girls separately were as follows:

	Boys	Girls	Total Sample
Reading readiness scores	<i>r</i> .65	<i>r</i> .46	<i>r</i> .46
Mental ages	<i>r</i> .49	<i>r</i> .45	<i>r</i> .53
Intelligence quotient	<i>r</i> .42	<i>r</i> .32	<i>r</i> .39

All the correlations obtained show definitely that five-year predictions of reading achievement based on first grade tests of intelligence and reading readiness are almost as reliable as one-year predictions of reading achievement based on the same tests. Neither is reliable enough for individual prediction, and some pupils who scored very low on one or both of the first grade tests attained or surpassed sixth grade norms. The success of these pupils with low readiness or mental scores may be attributable to adaptation of the primary reading program to their capacities or individual attention on the basis of these scores, which is the purpose of the tests.

The boys showed a marked bi-modality of reading readiness scores which gave a spuriously high correlation of this factor with their reading achievement, as can be seen by comparing it with the coefficient found for the girls and the entire group.

Lee-Clark readiness test scores yielded an *r* of only .56 with the Pintner-Cunningham mental ages. Hence it can be concluded that, although these tests do overlap somewhat, they measure different enough functions to justify continued use of both tests. If only one test can be given, a mental test seems to be as adequate as any single measure of reading readiness. Both types of tests can be used profitably by first grade teachers as a guide to the level and organization of first grade reading instruction. They are excellent screening instruments; pupils scoring low on either or both should be given individual diagnosis and attention.

It was observed that the 20 Chinese pupils in the study were all quite close to the average of the sample and the entire sixth grade in reading achievement. Their first grade scores, however, varied widely, a few being extremely high and a few rather low. Like other bilingual children who learn their English in school, some probably scored low because of a language handicap. Some Chinese children, however, begin Chinese language school at age four or five, an experience which might raise their aptitude for paper-and-pencil tests but not their later achievement. At any rate, this discrepancy might provide a basis for further investigation.

Conclusions

1. Scores on the Lee-Clark test of reading readiness and the Pintner-Cunningham test of intelligence given in the first grade predict reading achievement in the first five grades almost as reliably as in the first grade.
2. The intercorrelation between these two tests indicates slight overlapping, but considerable difference between the functions which they measure.
3. Girls were found to be slightly superior to boys in sixth grade reading achievement. Their superiority on first grade tests of intelligence and reading readiness was large enough to be statistically significant.
4. Mental age seems to be a better predictor of reading achievement than I.Q., but it exceeds only slightly the Lee-Clark reading readiness score.

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"Our school population has expanded because there are more people and more children; because of shifting population; because more children stay in school longer; because an increasingly technical civilization calls for a lengthened school experience in developing technical skills; because a higher average family income enables parents to provide for their children a longer period of education. These conditions are here to stay. The overcrowding of our schools cannot be explained away as a result of causes that are temporary in effect." (*Excerpt from Our School Population, page 8. Annual Report for 1949-50 of Dr. Willard E. Givens, executive secretary, National Education Association.*)

The Elementary School Counselor in California

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THE present study was developed because of the need for investigating the training, qualifications, and training needs of school personnel who assume responsibility for the adjustment of children during their elementary school years. It was felt that too often guidance responsibilities at the elementary level were left to over-worked teachers and administrators, and that special facilities frequently were not provided at all. It was felt, too, that an analysis of the existing level of training and a survey of the duties and training needs might prove of value in extending college and university offerings in guidance at the elementary school level.

In order to initiate the study, a letter of inquiry was sent to city, county, and rural administrators and guidance directors throughout California. In the letter they were asked to list the names of counselors within their elementary school districts. *Counselor* was defined as one who is responsible for helping teachers solve their own pupil-personnel problems, who assists persons in the solution of social or educational problems, and/or who coordinates and furnishes leadership in the personnel work of a school. It was stipulated that the counselor should be one who had direct contact with elementary school children.

Survey Technique

Of the 247 administrators and guidance directors who replied to the letter, 190 stated that no such persons were employed within their schools. From the responses of the 57 who did employ counselors, 182 names were listed.

During the month of February, 1948, an eight-page questionnaire was sent to these persons. Fifteen responded by saying that they had been erroneously classified as counselors, and 100 sent completed responses. For purposes of comparison, three groups were formed. Group I included 45 counselors in city districts above 30,000 population; Group II was composed of 36 counselors in districts below 30,000; while Group III was made up of 19 county school counselors who had direct guidance contacts with elementary school children. All of the district counselors were selected from districts with total populations under one million.

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Analysis of Responses

The academic preparation of the California counselors showed a wide divergence in terms of both time and amount. The amount of training ranged from two to eleven years, with a mean of 5.2 years for the total group. Group III counselors reported the greatest amount of training, with a mean of 6.7 years, while Group I counselors listed an average of 5.1 years, and those in Group II, 4.7 years. Of the total group, 87 per cent held the Bachelor's degree, 39 per cent, the Master's degree, and 5 per cent, the Doctor's degree. The variation in training is shown again by the fact that 68.4 per cent of Group III had earned the Master's degree, while 40 per cent of the Group I counselors and 22.2 per cent of those in Group II held the same degree. Similarly, four out of five of the Doctor's degrees were held by Group III counselors.

Reactions of the counselors to specific phases of their academic training indicated that certain courses were of great value to them in their work. The following courses were approved by two thirds or more of the total group as having much value: Growth and development of the elementary school child, principals of guidance, the use of standardized group tests, educational psychology, and the use of individual intelligence tests. Courses taken by fewer counselors, but approved by more than two thirds of those who had taken them, include growth and development of the kindergarten-nursery school child, guidance practices in the elementary school, conditions of learning, education of exceptional children, remedial techniques, the use of projective techniques, child welfare (in social case work school), clinical psychology, abnormal psychology, social case work, and psychology of adjustment.

Courses listed by more than two thirds of the counselors who had taken them, as having some or little value to them as counselors, include school law, elementary school administration, history of education, experimental psychology, physiological psychology, biology, and research techniques.

The need for practical training was stressed by many persons. Forty-eight per cent of the total group felt that psychological clinic experience would be of benefit to counselor trainees. Seventy-seven per cent felt that supervised field work would promote the learning of correct techniques under the guidance of experts, as well as to foster confidence and develop insight into the total school situation and their possible contribution to it.

A great majority of the counselors advocated teaching as a basis for public school counseling. Ninety of 94 counselors who had taught stated that teaching had been of value to them as counselors as an aid to understanding children, as well as to knowing the school situation and understanding the problems of teachers.

Eighty-five per cent of the counselors felt that teaching is not only desirable, but essential in counselor training. Many of them stated that a counselor who has taught will not be inclined to make impractical recommendations, and that his recommendations will be accepted more readily than those of a non-educator. Several mentioned the fact that counselors often are called upon to teach, while others felt that knowledge of the total program is essential, since often pupil difficulties emanate from faulty classroom procedures. The 13 persons who commented negatively regarding the essential nature of teaching qualified their negative responses in all but two instances by stating that teaching is desirable, helpful, or valuable. The two unqualified negative comments were made by persons who had not taught.

The work experiences of California counselors were not confined to teaching and counseling. Two hundred other occupations were listed in addition to these two. The types of work most frequently named as having value to counselors include work in industry or unskilled labor, supervision of youth groups, clinic work, and social case work.

Duties and Responsibilities

Duties performed by the counselors were numerous and varied. Thirty-four per cent of the group were actively engaged in teaching at the time of the study in classes from kindergarten to university level. While a majority reported responsibilities connected with the testing program and records, only 36 per cent stated that they worked with teachers in the interpretation of data. Although only 20 per cent were officially designated as attendance officers, 32 per cent investigated the causes of absences.

The entire group listed the study of individual problems as a responsibility. The counselors listed a total of 319 problems which were most commonly referred to them by teachers. Problems which involve social relationships accounted for 43 per cent of the total; 33.9 per cent of the problems were academic in nature, with failure to accomplish named as the single problem which was most frequently mentioned. In general, problems of aggression and failure to conform were of the greatest concern to teachers. Problems which involved withdrawal, daydreaming, insecurity, apathy and inertia accounted for only 16 per cent of the total number.

Forty different administrative duties were listed by the total group as responsibilities in addition to counseling and teaching. The mean numbered duties was 4.5 per person, with two persons listing more than 10. Administrative assignments reported included such tasks as cafeteria management, assembly and student body activities, supervision of book orders, and audio-visual coordination.

Services and Training

Many of the California counselors had spent long periods of time in their present communities. In many instances they had gone into counseling after years of teaching experience. Although the mean year for the initial counseling experience was 1942, 29 counselors of a total of 81 in the city and small district groups had worked in their present communities for 10 years or more. The average length of service to the present community was nine years.

Fifty per cent of the counselors spent three fourths or more of their time in counseling. Fourteen per cent spent less than half of their time as counselors.

Comments made by the counselors regarding their needs for further training emphasized the importance of practical experience. Interest frequently was expressed in supervised field work and case work, in the study of projective techniques, and in clinic experiences. The changes and extensions of present college and university offerings most often suggested included clinic work, supervised field work, and courses in *elementary school guidance*.

Recommendations

The recommendations made by the counselors through their questionnaire responses and through personal comments indicate that certain specific improvements may be made in both counselor training programs and in general guidance practices which now exist. Some general suggestions are listed briefly below:

1. Potential counselors should be encouraged during their undergraduate teacher training to incorporate within the training such courses as those recommended by the present group.
2. Graduate training for counselors should follow a period of successful teaching, and should include a definite program geared to elementary school needs.
3. College and university recognition should be given to the need for training elementary school guidance personnel.
4. Guidance services should be extended to include every teacher and child within the elementary school.
5. A salary differential between the amounts paid to teachers and counselors sufficient to attract and hold highly qualified persons
7. To meet the training needs of counselors in sparsely populated areas, cooperative planning by colleges, universities, and guidance associations seems essential.

What Kind of Audio-Visual Supervision Do Teachers Prefer?

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TODAY, administrators are looking for ways to help the teacher use audio-visual materials in the classroom. One approach to the problem is to discover which supervisory techniques are most preferred by teachers. If these preferences can be determined, a wise administrator can use them as a part of his in-service education program.

In order to find out which audio-visual supervisory techniques teachers preferred, a questionnaire survey was made in the San Bernardino (California) County Schools. The survey had a threefold purpose: (1) to find out which supervisory activities and techniques should receive emphasis in the supervisory program; (2) to find out whether or not teachers in different geographical regions of the area being surveyed had different preferences; and (3) to find out whether or not teachers instructing on different grade levels in the schools being surveyed had different preferences.

A questionnaire was distributed to all 392 teachers under instructional supervision by the San Bernardino County School Office. These teachers were distributed among 63 elementary schools, four junior high schools, and three high schools. A return of 278 questionnaires was received, or 70.9 per cent of the total number distributed.

The teachers were asked to check on a four-point scale of value how each of 57 listed supervisory activities (75 were listed for high school teachers) might help them improve their teaching with audio-visual materials.

Summary of the Findings

The teachers answering the questionnaire found the following supervisory activities to be of *most* value (the percentage of teachers who listed the activity of "most" value is found in the parenthesis):

1. *Publications*, such as lists of free and inexpensive materials (95%), lists of available audio-visual materials (93%), bulletins of new

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audio-visual materials added to the audio-visual department (92%), lists of community resources in various areas of the county (80%), bibliographies of selected references on audio-visual education (78%), bulletins of news and suggestions relative to audio-visual education (77%), and lists of information regarding school journeys (76%).

2. *Local workshops* conducted on the preparation of high school curricular materials (94%), elementary social studies materials (92%), elementary science materials (81%), elementary art materials (78%), elementary music materials (77%), room environments (77%).
3. *Demonstrations* of effective use of audio-visual materials in teaching the elementary social studies (93%), high school subjects (88%), elementary science (83%), elementary reading (82%), elementary art (82%), elementary language arts (77%), elementary physical education (76%).
4. *Institute sessions* which include preview of new materials (87%), demonstrations with a class of children of correct and effective use of audio-visual materials (82%), exhibits of audio-visual equipment (82%), and exhibits of materials which can be made by teachers (76%).

It is also important to look at those activities which teachers consider to be of *least* value to them in their teaching (the percentage of teachers who listed the activity of "most" value is found in the parenthesis):

1. *Local workshops* conducted on the techniques of educational photography (31%), production of hand made lantern slides (36%).
2. *Institute sessions* which include panel discussions on problems in using audio-visual materials and equipment (34%), lectures on the use of audio-visual materials in the classroom (50%).
3. *Participation in committee group work* on evaluation of radio programs and the preparing of a guide for radio listening on different grade levels (48%).

Conclusions

This survey indicates several key activities that an administrator would be wise to include in his audio-visual supervisory program. He should make sure that information about audio-visual materials is adequately disseminated to all teachers by means of catalogs, lists, and bulletins; he should organize local workshops for the preparation of curricular materials; he should organize demonstrations at institutes and meetings in which actual classes of children are shown being taught with audio-visual materials. In this way, he would start his in-service program with activities which teachers prefer, thus gaining their more ready cooperation and interest.

Emergency and Provisionally Credentialed Elementary School Teachers in California

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THE last war and its far-reaching effects created education situations that call for continual adjustment and appraisal. Such is the case with the teaching-learning situation in the elementary schools especially. In order to provide educational opportunities for the children of the State of California, measures had to be taken to assure an adequate supply of teachers.

The existing shortage of elementary school teachers had become so critical that, beginning in the year 1942, credentials requirements were lowered by legislative action and the first of thousands of substandard-trained teachers were temporarily credentialed and placed in the California public schools. Since 1942, the question of the sub-standard-trained teacher has been the subject of much concern among parents and educators. Conditions have been of such a nature as to render difficult the constant appraisal that this situation required.

The Problem

The time has come to appraise the need for the emergency and provisionally credentialed elementary school teachers in the State of California and to re-evaluate the credentialing policy in regard to these classifications of teachers. The purpose of this study, therefore, was to determine and describe the status of the emergency and provisionally credentialed elementary school teachers in California with regard to their: (1) present employment; (2) certification; (3) professional training; (4) experience; (5) expressed reasons for teaching; (6) reasons for previous withdrawal from teaching; (7) plans to continue teaching; (8) reasons for anticipated withdrawal from teaching.

Procedure

Because of the seriousness of the problem, it was felt that the most significant results could be obtained only by securing responses from *all* emergency or provisionally credentialed teachers holding such credentials

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as of a given date. In order to secure adequate responses to any investigation of this type, it was necessary that the instrument used for securing data be authorized and sent out by the California State Department of Education.

Responses to the official report form were received from 8,784 sub-standard-trained teachers. This number represented 97.4 per cent of the 9,018 teachers previously reported to the State Department. Of the 8,784 teachers, 7,544, or 85.9 per cent, held the emergency credential; 1,240 teachers, or 14.1 per cent, held the provisional credential. Because of the nature of the data, thorough analysis of the returns necessitated treatment by means of the International Business key-punching and card-sorting machines.

As a final phase of the investigation, a follow-up study in the new school year was made of the present employment and highest credential held as reported by the emergency and provisionally credentialed elementary school teachers in 12 selected counties representing various geographical areas in California. The follow-up technique was undertaken for the purpose of validating the April-May, 1949, responses of the teachers as to their availability for teaching during the ensuing school year, 1949-50, and also to verify the type of credential held.

Inquiry cards were mailed to the 1,374 emergency and provisionally credentialed teachers in the following 12 selected counties: Butte, Inyo, Kern, Kings, Mendocino, Plumas, Riverside, San Joaquin, Santa Barbara, Santa Clara, Shasta, and Trinity. The 1,374 teachers had responded to the items in the official report form concerned with intention to teach during the 1949-50 school year and the credential upon which such anticipated teaching would be performed. Responses were received from 883 teachers representing 64.2 per cent of the total 1,374.

Findings and Conclusions

For the purpose of this abstract, the findings and conclusions are grouped under the following five major classifications: (1) present employment; (2) professional training; (3) experience; (4) reasons for withdrawal from teaching; (5) potential supply of regularly credentialed elementary school teachers.

Present Employment

There is a definite tendency in California to hire emergency and provisionally credentialed teachers on a full-time regular basis regardless of the size and location of the various counties, with one exception (Los Angeles County).

Teachers employed to teach the special subjects of physical education and science seem to be hired as full-time teachers.

The largest numbers of emergency and provisionally credentialed elementary school teachers are now being employed in the kindergarten-primary grades. This level represents a shift in emphasis in the placement of teachers from Grades IV to VI as indicated by the results of Freeman's earlier study.*

The increasing awareness of teachers and school officials of the implications of the provisional credential is indicated by the widespread distribution of provisionally credentialed teachers throughout the counties and the fact that 95 per cent of the 1,240 teachers reporting received the provisional credential in 1948-49.

Counties with large population increases reflect this situation by increases in the number of emergency credentialed teachers hired.

Professional Training

There is a definite and consistent increase in the percentages of teachers intending to hold provisional and regular elementary credentials as the number of college units increases. The greater the amount of college credit that teachers have accumulated, the larger becomes the percentage of teachers who plan to complete the requirements for the regular credential.

School officials appear to be more selective in issuing certificates of need for the emergency elementary credential; on the basis of increased ratios of emergency credentials issued according to highest degrees held, they seem to desire to upgrade the standards for the emergency credential within their own districts or counties. The year 1947 appears to be the turning point in this increase in selectivity.

Experience

There was an available supply of emergency or provisionally credentialed teachers within each county for the school year 1949-50 with a background of certification, professional training, and experience at least equal to that of the teachers available during the school year, 1948-49. Over half of all teachers reporting had recent teaching experience in California or in some other state.

Emergency and provisionally credentialed elementary school teachers are being retained in teaching while they accumulate experience. This conclusion is supported by the 64.3 per cent of all teachers reporting that they have taught on emergency or provisional credentials for more than one year.

* Freeman, Frank N., "Characteristics of Teachers Holding War-Emergency Credentials," *California Journal of Elementary Education*, California State Department of Education, Sacramento, August, 1944, p. 59.

The emergency and provisionally credentialed teachers now in service represent a potential source of experienced regularly credentialed teachers in that approximately half of the 8,784 teachers involved in this investigation had five or more years' teaching experience, and approximately half of the 8,784 teachers have taught in one or more states other than California.

Reasons for Withdrawal from Teaching

Marriage, maternity, and entering another occupation are the three reasons for withdrawal from teaching that are validated in the respective rank order by comparison with the results of the survey by the Bureau of Education Research.

As reported by teachers in this investigation, age is a minor factor in the appraisal of a potential supply of emergency, provisional, or regularly credentialed elementary school teachers.

The replies of teachers to the follow-up inquiry card are distributed throughout the twelve selected counties by percentages in such even proportions as to justify the conclusions relative to validation of previously given data.

The sampling techniques involving reasons other than those indicated in the official report forms afford complete analysis of the various phases of this investigation in which they have been utilized.

Potential Supply of Regularly Credentialed Elementary School Teachers

A definite immediate source of 3,000 regularly credentialed elementary school teachers is available as indicated by approximately 40 per cent of 7,869 teachers who stated that they have the bachelor's degree or four or more years of training beyond high school.

A potential source of 4,000 regularly credentialed elementary school teachers is available within the next two years when the provisionally credentialed teachers are combined with the totals reporting that they hold the bachelor's degree.

The potential number of regularly credentialed teachers within three years increases to 7,029 on the basis of the 85.7 per cent of the 8,202 teachers who report 60 units or more of college work completed.

The number of teachers available during the school year 1949-50 will be equal at least to the number now in service on emergency or provisionally credentialed status. This conclusion is supported by the 90.7 per cent of all teachers who state that they will teach during the school year 1949-50 if offered positions.

A conservative estimate of 1,000 emergency and provisionally credentialed elementary school teachers per year during the period 1949 to 1952 should complete the requirements for the regular credential. This assumption is supported by the 1,857 teachers who state that they expect to complete the requirements for the regular credential in 1949 and the 1,386 who report the same goal for the year 1950.

Approximately 50 per cent of all teachers who did not apply for the emergency credential during the school year 1949-50 should be considered a potential source of future regularly credentialed elementary school teachers.

The 95.4 per cent of the 8,380 teachers intended to teach during the school year 1949-50 offered each county a proportionate number as an available potential supply. The responses of these teachers to the item dealing with intention to teach are close to totality regardless of county.

Recommendations

Serious consideration should be given to the up-grading of the present substandard-trained teachers in service in California within the next two years by raising the requirements for the emergency credential to 60 units of college work.

Provision should be made in an Annual State Report to be returned by all teachers to secure a statement of the exact courses needed to complete the requirements for the regular credential. These courses should be tabulated promptly by geographical areas and the results made available to teacher-training institutions as soon as possible in order that arrangements may be made to offer these courses during the regular sessions and summer sessions following the reporting of such data.

An intensive publicity campaign should be undertaken to make all substandard-trained teachers aware of their professional obligation to upgrade their credentials and at the same time to inform them of the immediate and specific offerings of the various teacher-training institutions provided in response to their reported needs.

A modified form of the present investigation should be undertaken as a continuing annual project in order to provide cumulative information in this phase of the teacher supply situation in California.

Further investigations should be made of the following areas, the need for which having been revealed by the present study: (1) teacher mobility within the State of California; (2) migration of teachers to the State of California with regard to the state from which they come, reasons for migration, salary schedules, and any related aspects of the problem necessary for its proper development.

Book Reviews

How To Make Achievement Tests

ROBERT M. TRAVERS

The Odyssey Press, New York, 1950, 180 pp.

The main purpose of this book, according to the author, is to help teachers develop the types of evaluation instruments that are known as objective tests of achievement. Secondarily, the book suggests a technic for defining educational goals.

Chapter titles will suggest the nature of the content and organization of the book. After a brief introductory chapter, the balance of the book deals with: steps in planning evaluation instruments; objective test questions; rules for constructing multiple-choice test questions; the assembly, administration, and scoring of the test; and the significance of test scores. In the appendix is found a discussion of objective methods of scoring free-answer examinations.

How to Make Achievement Tests is simply and clearly written. It is well organized and should serve as a handy reference or textbook for teacher use or in teacher education classes. The author succeeds in bridging the gap between the theory of test-making and the application of known technics.

The Federal Government and Education

HOLLIS P. ALLEN

McGraw-Hill Book Company, New York, 1950, 333 pp.

Occasionally a professional study in the field of education appears which relates professional problems of education to questions of public policy with such directness that it is of considerable interest and usefulness both to students of education and students of political life and government. Such a book is *The Federal Government and Education*, by Professor Allen, of Claremont Graduate School. It was Professor Allen who prepared the basic studies on the relationship of the Federal Government to education for the Hoover Commission Task Force on Public Welfare. Working with the Brookings Institute, Professor Allen spent many months in intensive review of the far-flung educational activities of the Federal Government and their implications for one of the basic institutions in American life. His book presents a full report of this intensive study. A great deal of the material covered is taken from information pro-

vided by Federal departments and agencies, including the Bureau of the Budget.

Typical of the wealth of information gleaned and summarized is the 33-page inventory of Federal educational activities found in Chapter 2. The inventory is in chart form and presents a detailed accounting of Federal expenditures whose proportions are impressive for their size and complexity. The present book is not alone valuable for the coverage of factual evidence with regard to the Federal Government and education, but also cuts deep into some of the most pressing problems of educational policy and leadership faced by the Federal Government at the present time. Those who have followed the controversy over the final Hoover Commission recommendations with regard to education are familiar with the fact that those recommendations are at variance with the conclusions reached by Professor Allen and those assisting him in their objective study. It will be interesting to many to get a clear picture of Professor Allen's recommendations with regard to the function of the Office of Education and its appropriate relation to the rest of the Federal governmental apparatus. All in all, we have here one of the most significant contributions made thus far to an understanding of the facts and fundamental problems involved in the role to be played by our national government in the area of public education.

Financing Education in Efficient School Districts

FRANCIS G. CORNELL, and Others

Bureau of Research and Service, College of Education, University of Illinois, Urbana, Illinois, 1949, 165 pp.

The subtitle of this volume describes its function: "A Study of School Finance in Illinois." While limited to a study of Illinois public schools, the survey and recommendations will be of interest to educators elsewhere. Topics discussed in the book are: (1) pupil distribution, school districts, and dollars; (2) Illinois' school finance problem; (3) reorganizing school districts; (4) comparable units for cost analysis; (5) the combined state-local pattern of financial support; (6) hypothetical plan of optimum district organization; (7) transportation of pupils; (8) school housing for larger attendance units; (9) development of a sparsity formula; and (10) developing methods of estimating school transportation cost for Illinois.

The book contains, in addition to a discussion of modern principles of school finance, many tables, graphs and charts that explain the survey data. Since most states are confronted with the problem of developing better systems of financing their public schools, the Illinois study should prove to be both stimulating and informative.

Research News and Views

A Committee on California School Population has been appointed jointly by Roy E. Simpson, Superintendent of Public Instruction, State Department of Education, and President Robert Gordon Sproul, of the University of California, with the general directive to make a careful study of the California school population in the interest of more accurate predictions of future enrollments.

Chairman of the committee is Joel A. Burkman, assistant chief, Division of State Colleges and Teacher Education, State Department of Education. Other members of the committee are: Kenneth R. Brown, assistant director of research, California Teachers Association; Ellis J. Groff, budget officer, University of California; Warren H. Natwick, consultant, Bureau of Education Research, State Department of Education; J. Neyman, professor of mathematics, director of statistical laboratory, University of California; W. R. Currie, chief financial research technician, Division of Budgets and Accounts, State Department of Finance.

The work of the Committee on California School Population is to be a long-range program. The results of such a study should be of equal interest to school authorities in other states.

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Data on size of classes for 1949-50 in public schools in 77 cities over 100,000 population are given in a recent NEA Research Service Bulletin. Similar data for smaller cities will be published in later reports.

Inasmuch as the NEA Research Division has made class size studies every five years since 1930-31, the present bulletin reveals trends in recent years. In addition to statistical data, the study includes reports of policy with respect to class size within the various school districts. Median class sizes reported by cities of over 100,000 population were:

	1940-41	1945-46	1949-50
Elementary Grades -----	34.1	33.8	32.5
Junior High School -----	33.4	31.8	31.7
Senior High School -----	31.1	29.0	28.3

There are from one to two million articles on scientific subjects published annually in some 50,000 scientific journals and reviews. Some 500 internationally-known journals work at abstracting the articles, but many fields lack such services. The UNESCO Conference on Science Abstracting held in Paris, in December, 1949, calls on all scientific periodicals to publish in all languages in their journals synopses of original articles. The scheme has already been adopted by a number of scientific periodicals. The Conference suggested the adoption of standard terminology and presentation for all abstracting journals. (Adapted from *The Phi Delta Kappan*, April, 1950.)

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The first statewide study of class size and teacher load involving all teaching personnel in the public schools of California is being conducted by the State Department of Education in cooperation with the California Teachers Association and the California Association of School Administrators. The basic data were collected last April. Separate survey forms were used for elementary teachers, junior high and high school teachers, and junior college teachers. A summary report of the study is to be prepared by the State Department of Education and should be available by January, 1951. A more detailed report presenting county and district comparisons, to be prepared by the CTA Research Department, will be completed shortly thereafter.

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California colleges and universities graduated 75 per cent more teachers in 1949-50 than in 1948-49, according to the Division of State Colleges and Teacher Education, California State Department of Education. In its second annual study of teacher supply and demand in California, the Division reported also that: (1) the State is training one and one-half times as many secondary school teachers as elementary teachers, whereas the demand in the elementary field is almost three times as great as in the secondary field; (2) one out of every eight persons teaching in California in 1949-50 was on an emergency credential; (3) eight thousand persons who taught in California public schools in 1949-50 were not expected to return to teaching in 1950-51; and (4) California's kindergarten-age population has increased 151.4 per cent since 1940, but the junior college-age group increased only 20.7 per cent.

The complete report of the second annual study of teacher supply and demand in California may be found in the May, 1950, issue of *California Schools*, the official publication of the California State Department of Education.

A survey conducted by the Bureau of Education Research of the California State Department of Education reveals that 146,983 pupils were in double sessions in California school districts at the end of October, 1949. The 1949 figure, in comparison with the 1946 total of 83,483, shows an increase of 63,500, or 76 per cent. The survey also showed that 59,609 children in elementary schools are attending classes in buildings not constructed for school purposes. These included tents, stores, churches, and other quarters converted to classroom use on an emergency basis.

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The 1949-50 Annual Report of the Profession to the Public, *Our School Population*, prepared by Dr. Willard E. Givens, executive secretary of the National Education Association, contains up-to-date information on school problems and needs. The report gives evidence to show that present conditions facing the schools (overcrowded classes, teacher shortages, inadequate housing, etc.) are not temporary in nature. Dr. Givens contends that present information justifies the conclusions that aggravated conditions will not be greatly relieved for many years. School construction, for example, must continue at the present rate for the next decade if we hope to provide decent housing for anticipated enrollments.

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The Kern County (California) Union High School District has recently completed a comprehensive community occupational survey which is expected to have significant implications for the programs of the schools in the district. Teachers were used for depth interviewing and preliminary sampling. Department heads and teachers of specialized vocational subjects assisted in the preparation of questionnaires, tables, and charts. Civic, business, and professional groups participated in the survey. The county and city Chambers of Commerce were especially active.

A valuable contribution to the success of the survey was made by the newspapers and radio stations of the county through needed publicity. More than 2,000 firms completed questionnaires for the survey.

A chapter is devoted to an analysis of each occupational area in the survey report. The final chapter of the report contains the recommendations of the steering committee. Foremost among the recommendations is a proposal that machinery be set up throughout the district for continuous study, evaluation, and action for bringing the entire vocational education program in line with the community needs. The study was directed by Norman Harris, director of research.

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